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Energy Review Team
Department of Trade & Industry
1 Victoria Street
London
SW1H 0ET

Dear Sir/Madam

Re: Energy Review 2006 – Submission from POWER

Summary of the submission

POWER – Pushing Offshore Wind Energy Regions is a European funded project creating a North Sea competence network for offshore wind energy, bringing together expert organisations in globally leading offshore wind regions in the Southern North Sea area. This submission is focussed on offshore wind energy.

POWER is disappointed about the lack of emphasis of the Energy Review consultation paper on further pushing forward renewable energy, and in particular offshore wind energy, as a significant carbon free energy source with substantial potential for economic benefits for the UK. As a nascent industry, the offshore wind sector still needs substantial support.

Response to Q1 (supply of energy – offshore wind energy)

Government should:

- Formally commit to a renewable energy target to 2020 and beyond as part of the Energy Review, and extend the Renewable Energy Obligation to at least 2020, to provide confidence and security for offshore wind farm developers
- Continue and increase provision of funding for Research & Development and Innovation in offshore wind
- Provide funding and support for SMEs in the offshore wind sector
- Invest into upgrading the grid for new offshore wind farms
- Fund further research into electricity storage

Response to Q iii. (joint working with other countries)

In order to benefit from the global lead in offshore wind experience that the regions in the Southern North Sea have between them, it is important to further facilitate co-operation and joint working. Government should:

- Lobby for EU policy to implement longer term renewable energy targets
- Work at national level with strategic partner countries in the EU to support the offshore wind industry
- Support the development of common safety training standards and vocational training harmonisation in offshore wind



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www.offshore-power.net



Information about POWER and its submission

POWER (Pushing Offshore Wind Energy Regions) is a European funded project creating a North Sea competence network for offshore wind energy. It brings together the key regions for offshore wind energy around the Southern North Sea, in the UK, Denmark, Germany, the Netherlands and Belgium. Its partners include business member organisations in the energy field representing together more than 500 businesses of the sector, leading research institutes and universities in offshore wind energy and local and regional authorities. Its UK partners are Suffolk County Council, EEEGr (East of England Energy Group), NaREC (New and Renewable Energy Centre), Renewables East and Waveney District Council. More information about POWER at www.offshore-power.net

This is a joint submission by the UK POWER partners, with approval of and contributions from the international POWER Project Steering Group, as well as individual experts in key organisations such as POWER's consultants Douglas-Westwood Ltd., the Wind Energy Agency Bremerhaven/Bremen (WAB) and Offshore Center Denmark. A full list of partners supporting this submission can be found in the Appendix. The submission reflects the views of the individual experts involved in POWER in each organisation; these views might not always be supported by the organisations as a whole.

The submission is based on findings from exchange of experience between the partner organisations, and research commissioned by the POWER project conducted by leading energy and business analysts Douglas-Westwood Ltd.

The UK partner regions, leaders in offshore wind energy

The East of England is ideally placed to become one of the international centres for the offshore renewable energy sector, with its experience in offshore oil and gas, a track record of successful implementation (Scroby Sands) and an ideal location for Round 2 developments. Partners in the East of England are committed to support the development of the region as a key player in the offshore wind energy sector. Suffolk County Council, East of England Development Agency, Renewables East and Waveney District Council are establishing an Offshore Renewable Energy Centre in Lowestoft, as a focal point for the developing sector. Through the East of England Energy Group (EEEGr), a close link between the traditional oil and gas industries and the evolving offshore renewable energy industry is ensured within the region. Developments such as the East Port in Great Yarmouth, which will create an outer harbour with significant potential for offshore wind energy related uses, and the arrival of 1st East, the Urban Regeneration Company for Lowestoft and Great Yarmouth, will further support the development of the sector.

The New and Renewable Energy Centre (NaREC) in Blyth is a Centre of Excellence for the UK's new and renewable energy industry, fast-tracking concept evaluation, feasibility studies and prototype evaluation and testing through to early commercialisation.

Energy Review - General Comments

POWER is disappointed about the lack of reference and emphasis of the Energy Review consultation paper on further pushing forward renewable energy, and in particular offshore wind energy. While it is accepted that, in the short term, offshore wind energy can only contribute a relatively modest percentage of electricity production in the UK, its long term potential of producing substantial amounts of carbon free energy is huge.

The offshore wind energy sector also provides substantial potential for economic and employment growth in the future for the UK as one of the globally leading regions in this field – together with other regions in the Southern North Sea, it presents an unequalled offering in European and global markets. A supply chain study¹ has been commissioned by the POWER project, looking at the offshore wind opportunities in the Southern North Sea (UK, Denmark, Germany, the Netherlands). This study concludes that these four countries are forecast a total expenditure in the offshore wind sector of over €7.6 billion over the next five years which is 59% of all global offshore wind expenditure. It also forecasts that a total of 5,666 new jobs in offshore wind power could be created between 2006-2010 in these countries. It is important to secure this position to maximum long-term advantage.

We are aware that DTI has conducted in 2004 a "Renewables Innovation Review"² to feed into future funding programmes and the Renewables Obligation Review. However, we are surprised that the Energy Review as a high profile consultation document does not reflect more clearly on the importance of renewable energy and the need to support it.

Offshore wind energy is not a fully matured industry, and clearly needs public sector support in order to overcome substantial challenges, in economic risk, grid issues, supply chain issues and in innovation. The UK Government as one of the industry's leaders should be fully committed to support this.

Response to Q1: What more could the government do on the demand or supply side for energy to ensure that the UK's long term goal of reducing carbon emissions is met?

Government should:

- *Formally commit to a renewable energy target to 2020 and beyond, and extend the Renewable Energy Obligation to that year*

To fully exploit the significant potential for offshore wind power (and renewable energy in general) demands that Government take a long-term view and commitment that enables operators to make development plans and the supply chain to invest in the appropriate resources. With offshore wind project lifecycles at 20-25 years it is important for investors to be able to foresee future support for as much of this period as possible.

While it is welcomed that the UK has confirmed the continuation of the Renewable Energy Obligation until 2015/2016, POWER feels that this scheme should be extended until at least 2020 to give additional confidence to offshore wind developers.

Similarly, Government should set formal, rather than aspirational, renewable energy targets for 2020 and beyond, as Government-set renewable energy targets are equally important for attracting investment. They indicate long term

¹ See POWER Transnational Offshore Wind Supply Chain Study, Douglas-Westwood Ltd for POWER, 2006 (downloads available after 30/03 from www.offshore-power.net)

² Renewables Innovation Review, DTI/Carbon Trust, 2004



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Government commitment to the sector. The Energy Review seems an appropriate time to commit to such a target.

➤ *Continue and increase funding for Research & Development (R&D) and Innovation in offshore wind*

An ongoing level of funding is still needed for R&D in offshore wind if the UK and other North Sea regions want to maintain their lead position in this field.

While DTI currently provides funding for innovative technologies and approaches which offer significant reductions in capital and operating costs of offshore wind farms, it is important that this funding is maintained and over time increased, to support overcoming a number of technical challenges in offshore wind that still need addressing, including:

- Lowering overall cost
- Increasing turbine capacity
- Alternatives to steel constructions (to overcome high steel prices)
- New foundation designs for operation in greater water depths
- Installation methods for increased distances from the shore
- Improving grid-system reliability
- Improving power output characteristics

Some of these issues might also need to be tackled with international partners.

Ongoing support is needed not only in R&D where there are technological challenges to address, but also for SME commercial development / innovation, without which R&D will not generate a return on investment.

➤ *Provide funding and support for SMEs*

Ongoing funding and support mechanisms for aiding SME business development activities is essential for the development of what still is a very new industrial sector. The benefits of such mechanisms to companies are evident in the case of Denmark's development of its wind turbine manufacturing industry.

➤ *Invest into upgrading the grid for new offshore wind farms*

Many of the areas of high wind resource lack good grid access. Important grid issues for additional large-scale offshore wind capacity include the availability of grid connection points, the availability of grid capacity, the necessary costs for improvements to the grid and who is responsible for paying to improve the grid. DTI will be aware of these issues through the DTI-commissioned Econnect report on grid connection issues "*The Development of the Offshore Grid for Connection of the Round Two Wind Farms*", and the conclusions of the "*Renewables Innovation Review*".

Significant investment to enable network integration will have to be made. Given the average five to ten year negotiation time-scale to secure way leave and develop power head lines, this is the most challenging issue for additional offshore wind penetration, and needs to be given priority by Government.

➤ *Further research into electricity storage*

Both onshore and offshore wind power generation need a cost-effective means of storing excess production at periods of low demand. This issue is somewhat reflected in the Energy Review with its reference to hydrogen, however, other storage systems may hold the answer and should be further explored.

Response to Q iii. Opportunities for more joint working with other countries on our energy policy goals

In order to benefit from the global lead in offshore wind experience that the regions in the Southern North Sea have together, it is important to further facilitate co-operation and joint working. Government should:

- *Lobby for EU policy to implement longer term renewable energy targets*

Similarly to the UK, the EU should extend their renewable energy targets to 2020 and beyond, to show continued commitment and give re-assurance to the market. The current EU renewable energy target to 2010 seems insufficient. The EU Commission's Energy Green Paper 2006³ raises the debate on what targets or objectives beyond 2010 are necessary; this question should be resolved soon.

- *Work at national level with strategic partner countries in the EU to support the offshore wind industry*

POWER shows the benefits of co-operating with key international partners to support the offshore wind industry and the further development of offshore wind farms. For offshore wind energy, the combined expertise between countries around the Southern North Sea is unrivalled, both regarding research and development and an established supply chain.

For Europe, and the North Sea region in particular, to remain the world leader in this sector, collaboration between national governments to support the offshore wind industry and coordinate the development of offshore wind farms would be highly beneficial. For the UK, in particular countries such as Denmark, Germany, Ireland, the Netherlands, Poland and Spain would be of interest for cooperation.

- *Support the development of common safety training standards and vocational training harmonisation in offshore wind*

It would be beneficial to have common safety training standards for offshore wind engineers across Europe, to support the development of a European wide offshore wind supply chain, and make the industry safer. UK Government could take a lead in such an initiative.

Similarly, there is currently no international harmonisation of vocational training in offshore wind energy, which would be beneficial for the sector. POWER partners are in the process of developing and adopting vocational training for the offshore wind energy that is harmonised and approved in the POWER regions, yet it would be beneficial to have such a standard across Europe.

Should you have any questions about this submission, or wish to have further information about POWER and its studies, please do not hesitate to contact me.

Yours faithfully

Michael Moll

POWER Project Manager (UK)

CC to all organisations listed in the Appendix

³ Green Paper - A European Strategy for Sustainable, Competitive and Secure Energy, Commission of the European Communities, 2006



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Appendix: POWER Partners who have adopted this submission

Note: The submission reflects the views of the individual experts involved in POWER in each organisation; these views might not always be supported by the organisations as a whole.

UK partners:

- Suffolk County Council – Co-ordinator of this response; UK lead for the POWER Project and Coordinator of Work Package 2 (supply chain/economic development) of the POWER project; www.suffolk.gov.uk
- EEEGr – East of England Energy Group; www.eeegr.com
- NaREC – New and Renewable Energy Centre; www.narec.co.uk
- Renewables East; www.renewableseast.co.uk
- Waveney District Council; www.waveney.gov.uk
- Douglas-Westwood Ltd (consultants working for POWER); www.dw-1.com

International partners:

Project Steering Group:

- Bremerhavener Gesellschaft für Investitionsförderung und Stadtentwicklung mbH (BIS); www.bis-bremerhaven.de – Overall lead partner of the project - Germany
- EU Vest Esbjerg; www.eu-vest.com - Danish lead partner - Denmark
- Kop en Munt / Gewest Kop van Noord-Holland; www.kopenmunt.nl - Dutch lead partner – Netherlands
- Autonomous Port of Oostende (APO); www.portofoostende.be - Flemish lead partner – Belgium
- University of Oldenburg's Institute for Chemistry and Biology of the Marine Environment (ICBM), www.icbm.de - Coordinator of Work Package 1 (planning & participation) of the POWER project
- Echelon Institute of Management Development (EIMD), Monnickendam; www.eimd.com - Coordinator of Work Package 3 (skills development) of the POWER project

Other experts of the POWER project being consulted on this submission:

- Wind Energy Agency Bremerhaven/Bremen (WAB); www.windenergie-agentur.de - Germany
- Offshore Center Denmark (OCD), Esbjerg; www.offshorecenter.dk - Denmark
- The Senator of Construction, Environment and Transport, Free State of Bremen (SBUV) - Germany